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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,034	12/11/2003	Munmaya K. Mishra	00130095	8769

63970 7590 03/12/2007

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EXAMINER	
GOLOBOY, JAMES C	
ART UNIT	PAPER NUMBER
1714	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/734,034	MISHRA ET AL.	
	Examiner	Art Unit	
	James Goloboy	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-11,13,15,16,18-24,26,28,30,31,33-35,37,39,40 and 42-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 6-11, 13, 15-16, 18-24, 26, 28, 30-31, 33-35, 37, 39-40, 42-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. All rejections in the office action mailed 8/30/06 are overcome by applicant's amendment of 12/21/06 except for those set forth below. New grounds of rejection are found below.

Claim Rejections - 35 USC § 112

Claims 1-4, 6-11, 13, 15-16, 18-24, 26, 28, 30-31, 33-35, 37, 39-40, 42-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 11, 20, and 33, and their dependent claims, refer to a reaction mixture "comprising (a) from about 55 to about 65 weight percent raffinate I stream and (b) from about 35 to about 45 weight percent isobutylene. It is not clear whether the 35-45% isobutylene includes the isobutylene present in the raffinate I stream, or is a separate component. Both interpretations are considered in the rejections below.

Claim Rejections - 35 USC § 103

2. Claims 1-4 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Samson (U.S. Pat. No. 4,605,808).

The rationale for this rejection is adequately set forth in paragraphs 4 and 13 of the office action mailed 8/30/06. Amended claim 1 is equivalent to original claim 5.

3. Claims 1, 7, 11, 13, 15-16, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Samson as applied to claims 1 and 4 above, and further in view of Papay (U.S. Pat. No. 5,652,201).

The discussion of Crawford and Samson in paragraph 2 above is incorporated here by reference. The differences between Crawford and Samson and the currently presented claims are:

i) Crawford and Samson do not disclose a Mannich adduct derived from hydrocarbyl-substituted phenols, aldehydes, and polyethylene polyamines, or a hydrocarbyl-substituted amine dispersant. This relates to claims 1, 7 and 16.

ii) Crawford and Samson do not disclose an additive comprising more than one dispersant. This relates to claims 11, 13, 15-16, and 18-19.

iii) Crawford and Samson do not disclose a post-treated dispersant. This relates to Claim 15.

With respect to i), Papay, from column 20 line 64 through column 21 line 4, discloses a Mannich polyamine dispersant comprising an alkylphenol, an aldehyde, and a polyamine, and in column 22 line 31 teaches that the polyamine may be triethylene tetramine, which is a polyethylene polyamine. The dispersant taught by Papay therefore meets Claims 1 and 7. From column 18 line 24 through column 20 line 63 Papay teaches a hydrocarbyl-substituted amine dispersant, as recited in Claim 1.

With respect to ii), Papay discloses in columns 15 through 24 Mannich polyamine dispersants, hydrocarbyl-substituted amine dispersants, and hydrocarbyl-substituted succinimide dispersants, as recited in Claim 11. In column 28 line 14 (Example B-2) a

succinimide dispersant with a hydrocarbyl substituent of molecular weight 1,150 is taught, while in column 28 line 22 the molecular weight of the hydrocarbyl substituent is 2,100. The molecular weight of these substituents fall within those ranges recited on lines 13-14 and line 16 of Claim 11 respectively. Papay further discloses in columns 24 and 25 that the lubricant may comprise a mixture of dispersants comprising dispersants of the same type, or dispersants of different types. The dispersants in this section of Papay are phosphorylated; however, the reference also discloses from column 44 line 57 through column 45 line 10 that multiple nonphosphorylated dispersants of the types described above may also be included in the lubricant composition. The mixtures of dispersants disclosed by Papay therefore meet the limitations recited in Claims 11, 13 and 16, while the mixtures of dispersants combined with the isoprene/styrene viscosity improver disclosed by Crawford and Samson meet Claims 18 and 19.

With respect to iii), Papay shows in column 23 lines 29-51 that the hydrocarbyl-substituted succinimides disclosed in columns 15 through 18 may be post treated, as recited in Claim 15.

It would have been obvious to one of ordinary skill in the art to include in Crawford and Samson a mixture of dispersants, as taught by Papay, in order to further improve dispersancy. It would have been obvious to use a Mannich adduct dispersant, as they are common dispersants in the lubricant industry. It would have been obvious to include a post treated dispersant for the purpose of imparting improved dispersancy or detergency properties to the dispersant.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Papay further in view of Samson as applied to Claim 1 above, and further in view of Lundberg (U.S. Pat. No. 4,971,711).

The rejection is adequately set forth in paragraph 21 of the office action mailed 8/30/06.

5. Claims 20-23, 26, 28, 30-31, 33-35, 37, 39-40, and 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Samson and Papay as applied to claims 1, 7, 11, 13, 15-16, and 18-19 above, and further in view of Lambert (U.S. Pat. No. 5,888,947).

The discussion of Crawford in view of Samson and Papay in paragraph 3 above is incorporated here by reference, as are the discussions of Crawford in view of Lambert, Papay, and Samson in paragraphs 9, 11, and 15 of the office action mailed 8/30/06. Crawford, Samson, and Papay differ from the currently presented claims in the following ways.

i) Crawford, Samson, and Papay do not disclose a method for reducing wear in moving parts with the lubricant composition.

ii) Crawford, Samson, and Papay do not disclose an internal combustion engine.

With respect to i), Lambert teaches in column 1 lines 21-28 that metal-to-metal contact between moving engine parts leads to wear, and in lines 29-33 teaches that lubricants can reduce wear between moving parts by forming a film between them.

Using the lubricant composition of Crawford, Samson, and Papay in the method of reducing wear taught by Lambert meets claims 20-22.

With respect to ii), Lambert teaches in the reference's claim 11 that the lubricant can be used in an internal combustion engine, and in the reference's Claim 18 more specifically discloses that it may be used in a diesel internal combustion engine.

It would have been obvious to use the lubricant composition of Crawford, Samson, and Papay to contact moving parts in an internal combustion engine in order to reduce wear on in the moving parts, as taught by Lambert in column 1 lines 21-33 and Lambert's claims 11 and 18.

6. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Samson, Papay, and Lambert as applied to claims 20-23 above, and further in view of Galka (U.S. Pat. No. 6,427,647).

The discussion of Crawford, in view of Samson, Papay, and Lambert in paragraph 5 above is incorporated here by reference. Crawford in view of Samson, Papay, and Lambert does not disclose the use of the lubricant composition in a gasoline internal combustion engine.

Galka discloses an internal combustion engine, and in column 3 line 34 teaches that gasoline may be used to power the engine. Galka also shows in column 2 line 17 that lubricant is delivered to the moving parts of the engine.

It would have been obvious to one of ordinary skill in the art to modify Crawford in view of Samson, Papay, and Lambert to include a gasoline internal combustion

engine, as taught by Galka, in order to increase the life of engines in gasoline-powered vehicles and tools.

7. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Samson, Papay, and Lambert as applied to claim 20 above, and further in view of Albertson (U.S. Pat. No. 3,653,273).

The discussion of Crawford in view of Samson, Papay, and Lambert in paragraph 5 above is incorporated here by reference. Crawford in view of Samson, Papay, and Lambert does not disclose the use of the lubricant composition in a vehicle transmission.

Albertson discloses a transmission for a vehicle, namely a bicycle as described in column 1 line 6, and in column 2 lines 52-53 teaches that lubricant is transmitted to the moving parts of the transmission as in Claim 24.

It would have been obvious to one of ordinary skill in the art to modify Crawford in view of Samson, Papay, and Lambert to include a vehicle transmission, as taught by Albertson, in order to reduce wear and increase the life of parts in vehicle transmissions.

8. Claims 1-4 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Tokumoto (U.S. Pat. No. 6,300,444).

The rationale for this rejection is adequately set forth in paragraphs 4 and 17 of the office action mailed 8/30/06. Amended claim 1 is equivalent to original claim 5.

9. Claims 1, 7, 11, 13, 15-16, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Tokumoto as applied to claims 1 and 4 above, and further in view of Papay (U.S. Pat. No. 5,652,201).

The discussion of Crawford and Tokumoto in paragraph 8 above is incorporated here by reference. The differences between Crawford and Tokumoto and the currently presented claims are:

i) Crawford and Tokumoto do not disclose a Mannich adduct derived from hydrocarbyl-substituted phenols, aldehydes, and polyethylene polyamines, or a hydrocarbyl-substituted amine dispersant. This relates to claims 1, 7 and 16.

ii) Crawford and Tokumoto do not disclose an additive comprising more than one dispersant. This relates to claims 11, 13, 15-16, and 18-19.

iii) Crawford and Tokumoto do not disclose a post-treated dispersant. This relates to Claim 15.

With respect to i), Papay, from column 20 line 64 through column 21 line 4, discloses a Mannich polyamine dispersant comprising an alkylphenol, an aldehyde, and a polyamine, and in column 22 line 31 teaches that the polyamine may be triethylene tetramine, which is a polyethylene polyamine. The dispersant taught by Papay therefore meets Claims 1 and 7. From column 18 line 24 through column 20 line 63 Papay teaches a hydrocarbyl-substituted amine dispersant, as recited in Claim 1.

With respect to ii), Papay discloses in columns 15 through 24 Mannich polyamine dispersants, hydrocarbyl-substituted amine dispersants, and hydrocarbyl-substituted

succinimide dispersants, as recited in Claim 11. In column 28 line 14 (Example B-2) a succinimide dispersant with a hydrocarbyl substituent of molecular weight 1,150 is taught, while in column 28 line 22 the molecular weight of the hydrocarbyl substituent is 2,100. The molecular weight of these substituents fall within those ranges recited on lines 13-14 and line 16 of Claim 11 respectively. Papay further discloses in columns 24 and 25 that the lubricant may comprise a mixture of dispersants comprising dispersants of the same type, or dispersants of different types. The dispersants in this section of Papay are phosphorylated; however, the reference also discloses from column 44 line 57 through column 45 line 10 that multiple nonphosphorylated dispersants of the types described above may also be included in the lubricant composition. The mixtures of dispersants disclosed by Papay therefore meet the limitations recited in Claims 11, 13 and 16, while the mixtures of dispersants combined with the isoprene/styrene viscosity improver disclosed by Crawford and Tokumoto meet Claims 18 and 19.

With respect to iii), Papay shows in column 23 lines 29-51 that the hydrocarbyl-substituted succinimides disclosed in columns 15 through 18 may be post treated, as recited in Claim 15.

It would have been obvious to one of ordinary skill in the art to include in Crawford and Tokumoto a mixture of dispersants, as taught by Papay, in order to further improve dispersancy. It would have been obvious to use a Mannich adduct dispersant, as they are common dispersants in the lubricant industry. It would have been obvious to include a post treated dispersant for the purpose of imparting improved dispersancy or detergency properties to the dispersant.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Papay further in view of Tokumoto as applied to Claim 1 above, and further in view of Lundberg.

The rejection is adequately set forth in paragraph 22 of the office action mailed 8/30/06.

11. Claims 20-23, 26, 28, 30-31, 33-35, 37, 39-40, and 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Tokumoto and Papay as applied to claims 1, 7, 11, 13, 15-16, and 18-19 above, and further in view of Lambert (U.S. Pat. No. 5,888,947).

The discussion of Crawford in view of Tokumoto and Papay in paragraph 9 above is incorporated here by reference, as are the discussions of Crawford in view of Lambert, Papay, and Tokumoto in paragraphs 9, 11, and 15 of the office action mailed 8/30/06. Crawford, Tokumoto, and Papay differ from the currently presented claims in the following ways.

i) Crawford, Tokumoto, and Papay do not disclose a method for reducing wear in moving parts with the lubricant composition.

ii) Crawford, Tokumoto, and Papay do not disclose an internal combustion engine.

With respect to i), Lambert teaches in column 1 lines 21-28 that metal-to-metal contact between moving engine parts leads to wear, and in lines 29-33 teaches that

lubricants can reduce wear between moving parts by forming a film between them. Using the lubricant composition of Crawford, Tokumoto, and Papay in the method of reducing wear taught by Lambert meets claims 20-22.

With respect to ii), Lambert teaches in the reference's claim 11 that the lubricant can be used in an internal combustion engine, and in the reference's Claim 18 more specifically discloses that it may be used in a diesel internal combustion engine.

It would have been obvious to use the lubricant composition of Crawford, Tokumoto, and Papay to contact moving parts in an internal combustion engine in order to reduce wear on in the moving parts, as taught by Lambert in column 1 lines 21-33 and Lambert's claims 11 and 18.

12. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Tokumoto, Papay, and Lambert as applied to claims 20-23 above, and further in view of Galka (U.S. Pat. No. 6,427,647).

The discussion of Crawford, in view of Tokumoto, Papay, and Lambert in paragraph 11 above is incorporated here by reference. Crawford in view of Tokumoto, Papay, and Lambert does not disclose the use of the lubricant composition in a gasoline internal combustion engine.

Galka discloses an internal combustion engine, and in column 3 line 34 teaches that gasoline may be used to power the engine. Galka also shows in column 2 line 17 that lubricant is delivered to the moving parts of the engine.

It would have been obvious to one of ordinary skill in the art to modify Crawford in view of Tokumoto, Papay, and Lambert to include a gasoline internal combustion engine, as taught by Galka, in order to increase the life of engines in gasoline-powered vehicles and tools.

13. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crawford in view of Samson, Papay, and Lambert as applied to claim 20 above, and further in view of Albertson (U.S. Pat. No. 3,653,273).

The discussion of Crawford in view of Samson, Papay, and Lambert in paragraph 11 above is incorporated here by reference. Crawford in view of Samson, Papay, and Lambert does not disclose the use of the lubricant composition in a vehicle transmission.

Albertson discloses a transmission for a vehicle, namely a bicycle as described in column 1 line 6, and in column 2 lines 52-53 teaches that lubricant is transmitted to the moving parts of the transmission as in Claim 24.

It would have been obvious to one of ordinary skill in the art to modify Crawford in view of Samson, Papay, and Lambert to include a vehicle transmission, as taught by Albertson, in order to reduce wear and increase the life of parts in vehicle transmissions.

Response to Arguments

14. Applicant's arguments filed 12/21/06 have been fully considered but they are not persuasive. Applicant has merely incorporated the limitations of certain dependent claims into the independent claims, and argued that the rejections of the independent claims are overcome due to the amendment, and the rejections of the dependent claims now incorporated into the independent claims are now moot due to the cancellation of those dependent claims. Applicant has not attempted to distinguish the claims over the prior art used to reject the dependent claims, and therefore the rejections of the dependent claims in the office action mailed 8/30/06 have now been applied to the independent claims.

Regarding the rejection under 35 USC 112, the amended claims are still unclear as to whether the isobutylene concentration includes the isobutylene from the raffinate I stream. The term "reaction mixture" does not necessarily mean that the raffinate and isobutylene are separate components, as raffinate I is itself a mixture, and the used of the open-ended "comprising" allows for additional non-recited components.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Goloboy whose telephone number is 571-272-2476. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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